

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please cancel claims 14, 17 and 22-40 without prejudice.

Please add new claims 41-52.

Please amend claims 1, 6, 9 and 15 as indicated below (material to be inserted is in **bold and underline**, material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[]]):

Listing of Claims:

1. (Currently Amended) A device for sorting particles in parallel, comprising:

an input reservoir configured to hold a mixture of first particles and one or more second particles;

a transport mechanism configured to move portions of the mixture in parallel from the input reservoir; and

a plurality of sorter units in fluid communication with the input reservoir and configured to receive the portions of the mixture, each sorter unit being configured to selectively move at least one second particle, if received in one of the portions, from a path followed by first particles received in the one portion so that the at least **one** second particle follows a different path,

wherein the transport mechanism is configured to move particles by dielectrophoresis.

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2. (Original) The device of claim 1, further comprising a manifold configured to place the input reservoir in fluid communication with the sorter units.
3. (Original) The device of claim 2, wherein the manifold defines a conduit network that branches as it extends from the input reservoir to the sorter units.
4. (Original) The device of claim 1, wherein the transport mechanism is configured to provide continuous transport of the portions of the mixture, and wherein each sorter unit includes a pulse-activated transport mechanism configured to selectively move the at least one second particle.
5. (Original) The device of claim 1, wherein the mixture is disposed in a fluid, and wherein the transport mechanism is configured to apply at least one of a positive and a negative pressure to the fluid.
6. (Currently Amended) The device of claim 5, wherein the transport mechanism also is configured to apply a negative pressure to the fluid downstream of the plurality of sorter units.
7. (Original) The device of claim 1, further comprising one or more receiver structures in fluid communication with the plurality of sorter units and downstream thereof.
8. (Original) The device of claim 7, wherein the one or more receiver structures include a single receiver configured to receive first particles from each of the sorter units.
9. (Currently Amended) The device of claim 7, wherein the transport mechanism also is configured to apply a positive pressure to the fluid in the input reservoir.

10. (Original) The device of claim 7, wherein the one or receiver structures include a single receiver configured to receive the at least one second particle from at least two of the plurality of sorter units.

11. (Original) The device of claim 7, wherein each sorter unit is in fluid communication with a different receiver structure so that the at least one second particle moved by different sorter units are placed in different receiver structures.

12. (Original) The device of claim 11, wherein the different receiver structures are wells of a microplate.

13. (Original) The device of claim 1, wherein the mixture of first particles and one or more second particles is a mixture of different types of cells.

14. (Canceled)

15. (Currently Amended) A device for sorting particles, comprising:
an input reservoir configured to hold a mixture of first and second particles;
a fluid supply reservoir configured to hold a fluid; and
a plurality of sorter units in parallel fluid communication with each of the input and fluid supply reservoirs, each sorter unit including a pair of adjacent first and second channels in fluid communication, the first channel being configured to receive a portion of the mixture from the input reservoir, the second channel being configured to receive a portion of the fluid from the fluid supply reservoir, the sorter unit including a piezoelectric mechanism and/or a heater mechanism configured to selectively move at least one of the second particles, if received in the portion from the input reservoir, to the second channel from the first channel.

16. (Original) The device of claim 15, further comprising a conduit network configured to place the input reservoir in fluid communication with the plurality of sorter units, the conduit network branching as it extends from the input reservoir to the sorter units.

17. (Canceled)

18. (Original) The device of claim 15, which further comprises a continuous transport mechanism configured to operate substantially continuously to move the portion of the mixture to each of the sorter units.

19. (Original) The device of claim 18, wherein the fluid of the fluid supply reservoir is a first fluid, the mixture of particles being disposed in a second fluid, and wherein the continuous transport mechanism is configured to apply a pressure to each of the first and second fluids.

20. (Original) The device of claim 15, wherein the first and second particles are different types of cells.

21. (Original) The device of claim 15, which further comprises a transport mechanism configured to move the mixture by dielectrophoresis.

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

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- 30. (Canceled)
- 31. (Canceled)
- 32. (Canceled)
- 33. (Canceled)
- 34. (Canceled)
- 35. (Canceled)
- 36. (Canceled)
- 37. (Canceled)
- 38. (Canceled)
- 39. (Canceled)
- 40. (Canceled)

41. (New) A device for sorting particles in parallel, comprising:

an input reservoir configured to hold a mixture of first particles and one or more second particles;

a transport mechanism configured to move portions of the mixture in parallel from the input reservoir; and

a plurality of sorter units in fluid communication with the input reservoir and configured to receive the portions of the mixture, each sorter unit being configured to selectively move at least one second particle, if received in one of the portions, from a path followed by first particles received in the one portion so that the at least one second particle follows a different path,

wherein each sorter unit is in fluid communication with a microplate so that second particles moved by different sorter units are placed in different wells of the microplate.

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42. (New) The device of claim 41, further comprising a manifold configured to place the input reservoir in fluid communication with the sorter units.
43. (New) The device of claim 42, wherein the manifold defines a conduit network that branches as it extends from the input reservoir to the sorter units.
44. (New) The device of claim 41, wherein the transport mechanism is configured to provide continuous transport of the portions of the mixture, and wherein each sorter unit includes a pulse-activated transport mechanism configured to selectively move the at least one second particle.
45. (New) The device of claim 41, wherein the mixture is disposed in a fluid, and wherein the transport mechanism is configured to apply at least one of a positive and a negative pressure to the fluid.
46. (New) The device of claim 45, wherein the transport mechanism is configured to apply a negative pressure to the fluid downstream of the plurality of sorter units.
47. (New) The device of claim 41, further comprising one or more receiver structures in fluid communication with the plurality of sorter units and downstream thereof.
48. (New) The device of claim 47, wherein the one or more receiver structures include a single receiver configured to receive first particles from each of the sorter units.
49. (New) The device of claim 47, wherein the transport mechanism is configured to apply a positive pressure to the fluid in the input reservoir.
50. (New) The device of claim 41, wherein the mixture of first particles and one or more second particles is a mixture of different types of cells.

51. (New) The device of claim 1, wherein the dielectrophoresis includes traveling wave dielectrophoresis.

52. (New) The device of claim 15, wherein the first channel follows a path, wherein the piezoelectric mechanism and/or heater mechanism is configured to selectively apply a transient pressure pulse to a segment of fluid disposed in the first channel, and wherein the transient pressure pulse is directed transversely of the path.